We claim:

1. A device for preventing arcing between contacts of a switching device as the contacts of the switching device are opened, the switching device including a coil for controlling the opening of the contacts, the device comprising:

a coil suppression circuit connected in parallel with the coil, the coil suppression circuit dissipating the energy stored in the coil in response to the de-energizing of the coil; and

a first solid state switch having a gate operatively connected to the coil suppression circuit and being connected in parallel with the contacts, the first solid state switch movable between an open position preventing the flow of current therethrough and a closed position in response to the dissipation of energy by the coil suppression circuit.

2. The device of claim 1 wherein the coil suppression circuit includes a first zener diode operatively connected to the coil, the first zener diode providing a reference voltage in response to the de-energizing of the coil.

3. The device of claim 2 further comprising a driver having an input operatively connected to the first zener diode and an output operatively connected to the gate of the first solid state switch, the driver closing the first solid state switch in response to the reference voltage across the first zener diode.

4. The device of claim 3 wherein the driver includes a timing device for closing the first solid state switch for a predetermined time period.

5. The device of claim 1 wherein the coil suppression circuit includes a second diode operatively connected to the coil in series with the first zener diode.

6. The device of claim 5 wherein the first zener diode and the second diode are connected in series and wherein the first zener diode is biased in a first direction and the second diode is biased in a second opposite direction.

7. The device of claim 1 further comprising a transformer, the transformer having a primary side operatively connected to the coil suppression circuit and a secondary side interconnected to the gate of the first solid state switch, the transformer transferring electrical energy from the coil suppression circuit to the gate of the first solid state switch.

8. The device of claim 7 further comprising a zener diode connected in parallel with the secondary side of the transformer.

9. The device of claim 7 wherein the transformer has a turn ratio of 1:1.

10. The device of claim 1 comprising a second solid state switch connected in series with the first solid state switch.

11. The device of claim 10 further comprising:

a first diode connected in parallel with the first solid state switch, the first diode biased in a first direction; and

a second diode connected in parallel with the second solid state switch, the second diode biased in a second direction.

12. A bypass circuit for preventing arcing of electrical energy passing between first and second contacts of a switching device having a coil wherein the contacts open and close in response to the energization of the coil, the bypass circuit comprising:

a first switch connected in parallel with the contacts of the switching device, the first switch movable between a closed position with the contacts open and an open position with the contacts closed; and

an actuation circuit interconnecting the coil and the first switch, the actuation circuit closing the switch in response to the de-energization of the coil.

13. The bypass circuit of claim 12 wherein the actuation circuit includes:

an energy dissipation device operatively connected to the coil to dissipate a portion of the energy released by the coil as the coil is de-energized; and

a driver interconnecting the energy dissipation device and the first switch, the driver closing the first switch in response to the portion of energy dissipated by the energy dissipation device.

14. The bypass circuit of claim 13 wherein the energy dissipation device is a zener diode.

15. The bypass circuit of claim 13 wherein the driver is a transformer, the transformer having a primary side operatively connected to the energy dissipation device and a secondary side operatively connected to the first switch.

16. The bypass circuit of claim 12 wherein the electrical energy passing between the contacts has an AC waveform and wherein the bypass circuit further comprises a second switch operatively connected to the actuation circuit and being connected in parallel with the contacts of the switching device, the second switch movable between a closed position with the contacts open and an open position with the contacts closed.

17. The bypass circuit of claim 12 further comprising a second switch operating connected to the first switch, the second switch controlling the rate of closure of the first switch.

18. A bypass circuit for preventing arcing of electrical energy passing between first and second contacts of a switching device having a coil wherein the contacts open and close in response to the energization of the coil, the bypass circuit comprising:

a first switch connected in parallel with the contacts of the switching device, the first switch movable between an open position and a closed position;

an energy dissipation device operatively connected to the coil to dissipate a portion of the energy released by the coil as the coil is de-energized; and

a driver interconnecting the energy dissipation device and the first switch, the driver closing the first switch prior to the opening of the contacts in response to the portion of energy absorbed by the energy dissipation device.

19. The bypass circuit of claim 18 wherein the driver is a transformer, the transformer having a primary side operatively connected to the energy dissipation device and a secondary side operatively connected to the first switch.

20. The bypass circuit of claim 19 further comprising a varistor connected in parallel with the contacts of the magnetic switching device.

21. The bypass circuit of claim 18 wherein the electrical energy passing between the contacts has an AC waveform and wherein the bypass circuit further comprises a second switch operatively connected to the driver and being connected in parallel with the contacts of the switching device, the second switch movable between an open position and a closed position.

22. The bypass circuit of claim 21 wherein the driver closes the second switch prior to the opening of the contacts in response to the portion of energy dissipated by the energy dissipation device.